



UNITED STATES PATENT AND TRADEMARK OFFICE

50
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,954	12/26/2001	Robert C. Meier	72255-11670	3569

23380 7590 06/22/2005

TUCKER, ELLIS & WEST LLP
1150 HUNTINGTON BUILDING
925 EUCLID AVENUE
CLEVELAND, OH 44115-1475

EXAMINER

TRAN, NGHI V

ART UNIT	PAPER NUMBER
----------	--------------

2151

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,954

Applicant(s)

MEIER, ROBERT C.

Examiner

Nghi V. Tran

Art Unit

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04/04/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

PD

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: In line 10, the phrase, "forwarding ...the home agent_" (emphasis added) appears to be a typographic error for --forwarding...the home agent;--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Magret, U.S. Patent No. 6,856,624.

4. With respect to claim 1, Magret teaches a method for a DHCP client to send a DHCP request to a DHCP server via a BOOTP Relay Agent, the DHCP client contained in a Mobile Host having a MAC address and having MAC layer connectivity with a foreign agent having a MAC address and a care of IP address, the BOOTP Relay Agent

Art Unit: 2151

being coupled to a home agent having an address [see abstract and figs.1, 7-10], the steps comprising:

A) sending a mobile IP Registration Request message and a Mobile IP Registration Reply message to establish a Mobile IP forward tunnel and a Mobile IP reverse tunnel [col.5, ln.4 - col.6, ln.43], the Mobile IP Registration Request having a Mobile Host Identifier that is set to the MAC address of the Mobile Host, and the Mobile IP Registration Reply message having a Mobile Host Identifier that is set to the address of the Mobile Host, wherein the MAC address of the Mobile Host is used to identify mobility bindings for the Mobile Host [col.6, lns.43-57 and col.7, lns.39-48];

B) generating a DHCP request, the DHCP request having a protocol field, the protocol field containing the MAC address of the Mobile Host [col.6, lns.43-57 and col.7, lns.39-48];

C) sending the DHCP request to the foreign agent [col.5, lns.65-66];

D) adding an encapsulation header by the foreign agent [col.7, lns.19-26 and col.8, lns.4-10];

E) sending the request to the home agent [col.11, ln.60 - col.12, ln.13];

F) removing the encapsulation header [col.12, lns.13-15]; and

G) forwarding the request to a home subnet [col.12, lns.16-19].

With respect to claim 2, Magret further teaches the steps further comprising:

H) generating a DHCP reply, the DHCP reply having a protocol field, the protocol field containing the MAC address of the Mobile Host [col.5, ln.62 - col.6, ln.56];

Art Unit: 2151

I) sending the DHCP reply across the home subnet to the home agent [col.6, Ins.6-20];

J) adding an encapsulation header to the reply by the home agent [col.6, Ins.21-31];

K) forwarding the reply to the foreign agent [col.11, Ins.60-67];

L) removing the encapsulation header by the foreign agent [col.8, Ins.4-38 and col.12, Ins.9-13]; and

M) forwarding the reply to the mobile host [col.12, Ins.14-19].

5. With respect to claim 3, Magret further teaches the encapsulation header added to the DHCP request is an IP encapsulation header having a source field containing the IP address of the foreign agent and a destination field containing the IP address of the home agent [figs.5-6 and col.8, ln.47 - col.9, ln.44].

6. With respect to claim 4, Magret further teaches the encapsulation header added to the DHCP reply is an IP encapsulation header having source field containing the IP address of the home agent and a destination field containing the IP address of the foreign agent [figs.5-6 and col.8, ln.47 - col.9, ln.44].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2151

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magret, U.S. Patent No. 6,856,624, in view of W. Wimer, RFC 1432 (hereinafter Wimer), and further in view of Fijolek et al., U.S. Patent No. 6,058,421 (hereinafter Fijolek).

9. With respect to claims 5-20, Magret teaches a method for a DHCP client to send a DHCP request to a DHCP server via a BOOTP Relay Agent, the DHCP client contained in a Mobile Host having a MAC address and having MAC layer connectivity with a foreign agent having a MAC address and a care of IP address, the BOOTP Relay Agent being coupled to a Home Agent having an address [col.6, lns.43-57 and col.7, lns.39-48], the steps comprising:

A) establishing a Mobile IP reverse tunnel by sending a Mobile Host Registration request with a Mobile Host Identifier that is set to the MAC address of the Mobile Host, wherein the MAC address of the Mobile Host is used to identify mobility bindings for the Mobile Host [see abstract; col.5, ln.4 - col.6, ln.43; col.2, lns.27-57];

B) establishing a Mobile IP forward tunnel by sending a Mobile Host Registration Reply request with a Mobile Host Identifier that is set to the MAC address of the Mobile Host, wherein the MAC address of the Mobile Host is used to identify mobility bindings for the Mobile Host [col.5, ln.4 - col.6, ln.43; col.3, ln.44 - col.4, ln.25];

Art Unit: 2151

E) adding an inner encapsulation IP header and an outer encapsulation IP header to the DHCP request, the inner IP encapsulation header having a source IP address and a destination IP address [col.7, Ins.19-26; col.8, Ins.39-48; and figs.2-4];

F) setting the inner IP encapsulation header source address to indicate that the source station does not have an IP address [col.7, Ins.19-26 and col.8, Ins.39-48]; and

G) sending the DHCP request to the MAC address of the foreign agent [col.5, Ins.65-66];

H) examining the inner IP encapsulation header source IP address [col.3, Ins.11-34;];

I) adding an outer IP encapsulation header, the outer IP encapsulation header having a source address and a destination address [col.3, ln.44 - col.4, ln.26];

J) setting the outer IP encapsulation header source address to the foreign agent IP address and the outer IP encapsulation header destination address to the home agent IP address [col.6, Ins.21-64];

K) forwarding the request to the home agent [col.7, Ins.19-26];

L) removing the outer IP encapsulation header [col.6, Ins.16-18];

M) examining the inner IP encapsulation header source address [col.7, Ins.19-26; col.8, Ins.4-38]; and

N) removing the inner IP encapsulation header [col.6, Ins.19-20]; and

O) forwarding the request to a BOOTP relay agent coupled to the home agent [col.6, ln.18];

R) forwarding the DHCP request to the DHCP server [fig.1].

Art Unit: 2151

However, Magret is silent on the following steps:

C) generating a DHCP request, the DHCP request having a giaddr field and a protocol field;

D) setting the giaddr field to 0 and the protocol field to the MAC address of the Mobile Host;

P) obtaining the MAC address of the mobile host from the chaddr field in the BOOTP header; and

Q) inserting the BOOTP relay agent IP address into the giaddr field of the BOOTP header;

In DHCP method, Wimer discloses the following steps:

C) generating a DHCP request, the DHCP request having a giaddr field and a protocol field [pg.4];

P) obtaining the MAC address of the mobile host from the chaddr field in the BOOTP header [pgs.5&11 i.e. chaddr (Client Hardware Address) = MAC address]; and

Q) inserting the BOOTP relay agent IP address into the giaddr field of the BOOTP header [pgs. 7&10];

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Magret in view of Wimer by setting the giaddr field to 0 and inserting the BOOTP relay agent IP address into the giaddr field, and obtaining the MAC address of the mobile host from the chaddr field because this feature encourages more flexible configuration schemes without rebroadcast the BOOTREQUEST on the physical interface from whence it came [Wimer, page 10]. It is

Art Unit: 2151

for this reason that one of ordinary skill in the art at the time of the invention would have been motivated to modify Magret in view of Wimer in order to use the same destination (or set of destinations) for all BOOTREQUEST message it relays from a given client [Wimer, page 10].

On the other hand, both Magret and Wimer fail to teach or suggest the step D) setting the giaddr field to 0.

In DHCP method, Fijolek suggests setting the giaddr field to 0 [col.16, Ins.41-49].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify both Magret and Wimer, and further in view of Fijolek by setting the giaddr field to 0 because this feature allows the DHCP client on the same subnet of the DHCP server [Fijolek, col.16, Ins.41-49]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated both Magret and Wimer, and further in view of Fijolek in order to send any return messages to either the client's network address or to the client's hardware address specified in DHCP chaddr-field or to the local subnet broadcast address [Fijolek, col.20, Ins.40-50].

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. "Method and apparatus for auto-configuring layer three intermediate computer network device," by Gai et al., U.S. Patent No. 6,697,360.

Art Unit: 2151

- b. "Route optimization technique for mobile IP," by Johansson et al., U.S.

Patent Application Publication No. 2002/0080752.

- c. "Network-based mobile workgroup system," by Forsl[00f7]w, U.S. Patent

Application Publication No. 2002/0069278.

- d. "Methods for restricting access of network devices to subscription services in a data-over-cable sytem," by Fijolek et al., U.S. Patent No. 6,351,773.

- e. "Method and apparatus for providing mobile and other intermittent connectivity in a computing environment," by Hanson et al., U.S. Patent No. 6,546,425.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi V. Tran whose telephone number is (571) 272-4067. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571) 272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ZARNI MAUNG
SUPERVISORY PATENT EXAMINER